RED SHALE

KANSAS RANGE SITE DESCRIPTION

1. Location of Site:

Land Resource Area 78
Central Rolling Red Plains

2. Climate:

See climate for LRA 78
(Filed in the front of Section II-E)

3. Topography:

This site occurs on moderately steep to very steep slopes often dissected by gullies and geological eroding areas. The rough, broken terrain includes the soils of this site, gypsum caprocks, and exposed shaly, parent material.

4. Soils and Hydrological Characteristics:

a. This site consists of highly erosive, reddish, calcareous, clayey soil material. It contains loamy and clayey colluvium. Depth to clayey shale is generally less than 12 inches. Lenses of gypsum are common. The available water capacity is low or very low.

b. The map unit that represents this site is "Rough Broken Land, Shaley. This site occurs on slopes of 15 to 80 percent.

c. The soils of this site are susceptible to wind and water erosion as well as severe gully erosion.

5. Climax Vegetation:

a. The natural potential vegetation on this site is considerably variable because of the steep slopes and shallow to very shallow soils that have rapid runoff and are in association with geologically eroding areas. The typical vegetation is a mixed grass prairie. Little bluestem and sideoats grama are the dominant species on this site making up 60 to 70 percent of the potential vegetation. Significant amounts of big bluestem, indiangrass, switchgrass, and Canada wildrye may be found on areas where the soil is more than 12 inches deep. A variety of short and midgrasses makes up an additional 15 percent of the vegetation. The remaining 15 percent consists of mostly perennial forbs.

In its development, the vegetation on this site was greatly influenced by grazing and occasional wildfires. The grazing was predominantly by large transient herds of bison and lesser numbers of elk and antelope.

b. Guidelines for Determining Range Condition:

(Percentage of total production by weight)

Grasses and Grasslike - 85 percent			Forbs - 15 percent			Trees, Shrubs, and Cacti - T
70	10	big or sand bluestem	10	catclaw sensitivebriar	T	aromatic sumac
	5	Canada wildrye		dotted gayfeather		hackberry
	5	indiangrass		fendler eveningprimrose		leadplant
	50	little bluestem		heath aster		pricklypear
	25	sideoats grama		Missouri milkvetch		redcedar
	5	switchgrass		purple prairieclover		smooth sumac
15	10	blue grama		serrateleaf eveningprimrose		
	5	buffalograss		stenosiphon		
	5	hairy grama		upright prairieconeflower		
	5	sand dropseed		white prairieclover		
	5	silver bluestem	5	ashy goldenrod		
	5	western wheatgrass		babywhite aster		
T		purple threeawn		broom snakeweed		
		red threeawn		flattop hymenopappus		
				gyp phacelia		
				ironplant		
				lambert crazyweed		
				leafy goldaster		
				Louisiana sagewort		
				nineanther dalea		
				slender mentzelia		
				stiff goldenrod		
				tenpetal mentzelia		
				western ragweed		

c. Invaders common to this site are annual broomweed, common sunflower, foxtail barley, hairy tridens, Japanese brome, little barley, prairie threeawn, and sixweeks fescue.

6. Management Implications:

The droughty nature of this site causes a large variation in production between favorable and unfavorable years. Grazing management that provides for proper use and periodic rests during the growing season helps to maintain the site. Vegetative recovery on this droughty site is slow.

Overgrazing with cattle on this site rapidly reduces the occurrence of big bluestem, switchgrass, and other tall grasses along with catclaw sensitivebriar. With initial overgrazing, sideoats grama and little bluestem may increase but soon will be replaced by short grasses and threeawns as overgrazing continues. Only the more gentle slopes of this site, because of their accessibility, are subject to serious overgrazing unless most of the adjacent sites have been severely overgrazed.

7. Wildlife Considerations:

The droughty nature of this site tends to discourage use by significant numbers of wildlife. This site may be used by quail, deer, and jackrabbits for occasional feeding and loafing areas.

Songbirds, mice, lizards, and other small animals make limited use of the site. The lack of cover on this site makes many of these species susceptible to predation by coyotes, hawks, and owls.

Some denning animals may den on this site when more suitable sites are unavailable in the area.

8. Other Uses and Values:

The steep slopes and erosive nature of this site and associated geological eroding areas limit the use of this site to rangeland and wildlife use.

9. Herbage Production Guidelines:

The following guidelines are based on available clipping data when this site is in excellent condition. Vigor of principal forage species, time of burning, if fire is used, as well as growing conditions, influence annual herbage production.

	Total Air Dry Herbage	
Growing Conditions	Pounds/Acre	Kilograms/Hectare
Favorable	1,400-1,800	1,570-2,020
Normal	1,000-1,400	1,120-1,570
Unfavorable	600-1,000	670-1,120

10. Guide to Initial Stocking Rates:

Range Condition	Percent Climax Vegetation	Acres/AU Yearlong	AU Months Per Acre	Hectares/AU Yearlong	AUM's per Hectare
Excellent	76-100	25-35	.4	10-14	1.0
Good	51-75	35-50	.3	14-20	.75
Fair	26-50	50-80	.2	20-36	.5
Poor	0-25	80+	.1	36+	.25

These guidelines are considered safe initial stocking rates from which a sound management program can be built. Grazing only during the dormant season or use of a specialized grazing program will usually allow a substantial increase in the stocking rates shown.

This site is not normally used for hay production.

11. Relative Preference of Plant Species:

Preferences of plant species by classes of livestock and uses by wildlife will vary from year to year and season to season. The table below is what might be expected under average climatic conditions and good management.

Forage Preferences

H = High
M = Medium
L = Low

Wildlife Preferred Uses

C = Cover
F = Food
N = Nesting

Plant Species	Animal Species: Cattle	Deer	Quail
ashy goldenrod	L	---	---
big or sand bluestem	H	C,F	C,N
blue grama	H	F	---
buffalograss	H	---	---
catclaw sensitivebriar	H	F	F
dotted gayfeather	M	F	F
hairy grama	M	---	---
heath aster	M	F	C
little bluestem	H	C,F	C,N
Louisiana sagewort	M	F	F
sand dropseed	M	---	C
serrateleaf eveningprimrose	L	F	F
sideoats grama	H	F	C,N
silver bluestem	L	---	C,N
switchgrass	H 1/	F	C,F,N
upright prairieconeflower	L	F	F
western ragweed	M	F	F
western wheatgrass	M	F	C,N

1/ Preferred during first half of growing season.

Reference:

Anderson, Kling L. and Clenton E. Owensby. 1969 Common Names of a Selected List of Plants. Kansas State University Tech. Bul. 117.